This document is guaranteed to be current only to issue date.

Some Mars Global Surveyor documents that relate to flight operations are under revision to accommodate the recently modified mission plan.

Documents that describe the attributes of the MGS spacecraft are generally up-to-date.

542-409, Volume 5, Part 2

Mars Global Surveyor

Mission Operations Specifications

Volume 5: Interfaces

Part 2: Operational Interface Agreements

Final Update

August 26, 1996

Jet Propulsion Laboratory
California Institute of Technology

JPL D-12369, Volume 5, Part 2

542-409, Volume 5, Part 2

MARS GLOBAL SURVEYOR

Mission Operations Specifications: Volume 5, Part 2: Interfaces (Operational Interface Agreements)

Prepared by:

S. Linick

S. Linick
Mission Ops System Engineer

Approved by:

Peter Theisinger
Flight Ops Support & Development Manager

August 26, 1996

JPL

Jet Propulsion Laboratory
California Institute of Technology

JPL D-12369, Volume 5, Part 2
542-409, Volume 5, Part 2

DOCUMENT CHANGE LOG

Date	Revision	OIA #	Folder
4/1/96	A	DSN-009	RTOT.DSN
4/1/96	A	DSN-010	RTOT.DSN
4/1/96	A	DSN-011	RTOT.DSN
4/1/96	A	DSN-012	RTOT.DSN
8/26/96	Entire Document Re-issued		

MARS GLOBAL SURVEYOR
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FOS.DSN	***Flight Ops Support - Deep Space Network (FOS.DSN)***
FOS.DSOT	***Flight Ops Support -Data Systems Ops Team (FOS.DSOT)***
FOS.DAA	***Flight Operations Support - Data Administration and Archive (FOS.DAA)***
SCT	***Spacecraft Team***
SCT.MC	***Spacecraft Team - Mission Control (SCT.MC)***
P&ST	***Planning and Sequence Team***
SEQ	***Sequence***
RES	***Resource Scheduling***
SOT	***Science Operations Team***
S.RST	***Radio Science Team (SOT.RST)***
S.SIT	***Science Instruments Team (SOT.SIT)***
NAV	***Navigation Team***

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

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FLIGHT OPERATIONS SUPPORT

DSN — Deep Space Network (FOS.DSN)

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
DSN-001	B	DSN VIEW-PERIOD FILES	FOS.DSN	NAV, RES, SCT.MC, SEQ, SOT.RST	Dave Recce
DSN-002	B	DSN 8-WEEK OPERATIONS PLANNING FORECAST	FOS.DSN	RES	Dave Recce
DSN-003	B	DSN 7-DAY OPERATIONS SCHEDULE	FOS.DSN	NAV, RES, SCT.MC, SEQ	Dave Recce
DSN-004	B	INTER-CENTER VECTORS	FOS.DSN	NAV	Dave Recce
DSN-005	B	ORBIT DATA FILES (ODFs)	FOS.DSN	NAV, SOT.RST.FOS.DAA	Dave Recce
DSN-007	B	ARCHIVAL TRACKING DATA FILES (ATDF)	FOS.DSN	NAV, SOT.RST, FOS.DAA	Dave Recce
DSN-008	B	TRACKING STATION (DSS) LOCATIONS	FOS.DSN	NAV	Dave Recce
DSN-009	B	WEATHER DATA	FOS.DSN	NAV, SCT, SOT.RST, FOS.DAA	Dave Recce
DSN-011	A	UNIVERSAL TIME & POLAR MOTION (UTPM) FILE	FOS.DSN	NAV, SCT, SOT.RST, FOS.DAA	Dave Recce
DSN-012	B	MEDIA CALIBRATION DATA FILES	FOS.DSN	NAV, SOT.RST, FOS.DAA	Dave Recce
DSN-013	B	RADIO SCIENCE & OPEN-LOOP RX Tuning Predicts	FOS.DSN	SOT.RST	Dave Recce
DSN-014	B	RFI PREDICTS	FOS.DSN	SCT.MC	Dave Recce
DSN-015	B	CLOCK AND FREQUENCY OFFSET INFORMATION	FOS.DSN	NAV	Pat Esposito
DSN-017	Orig.	DSS PASS LOGS/RECORDS ARCHIVE	FOS.DSN	NAV, SCT, SOT.RST	Dave Recce
DSN-018	B	EARTH ORIENTATION PARAMETERS (EOP) FILE	FOS.DSN	NAV, SOT.RST, FOS.DAA, SCT	Dave Recce

DSOT — Data Systems Operations Team (FOS.DSOT)

Doc. #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
DST-001	A	DSOT Capabilities Document This Document takes the place of OIAs.	FOS.DSOT	FOS.DAA, SCT, SEQ	Carl Pregozen

DAA — Data Administration and Archive (FOS.DAA)

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
DAA-001	A	SPICE Leap Second File	DAA {NAIF}	SCT, NAV, SOT, DAA	John Swift
DAA-002	A	E-Kernel	DAA	SOT.RST, SOT.SIT	John Swift
DAA-003	A	QQC Summary Report	DAA	SCT, SOT.RST, SOT.SIT	John Swift
DAA-004	Orig.	DAA Team Significant Events Report	DAA	SOT.RST, SOT.SIT	John Swift
DAA-005	Orig.	DAA Team Science Data Progress Report	DAA	SOT.RST, SOT.SIT	John Swift

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SCT **Spacecraft Team (SCT)**

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
SCT-001	A	Maneuver Performance Data File (MPDF)	SCT	NAV, RST	Jim Neuman
SCT-002	A	Maneuver Implementation File (MIF)	SCT	NAV, RST	Jim Neuman
SCT-003	A	SCT System Report	SCT	All Teams	Jim Neuman
SCT-004	A	C-Kernel	SCT	SOT.SIT	Jim Neuman
SCT-005	A	Engineering Channel Parameter Table Update	SCT	SOT	Jim Neuman
SCT-006	A	Decom Map Updates	SCT	SOT	Jim Neuman
SCT-008	A	Telecom / SCT Trigger Files	SCT	SEQ	Jim Neuman
SCT-009	A	Angular Momentum Desaturation File	SCT	NAV, RST	Jim Neuman
SCT-010	A	Navigation Engineering Information File (NEIF)	SCT	NAV	Jim Neuman
SCT-013	A	Telecom Performance Predictions	SCT	FOS.DSOT	Jim Neuman
SCT-014	A	Spacecraft Clock Coefficient File	SCT	SEQ, FOS.DSOT, FOS.DAA, SOT	Jim Neuman
SCT-015	Orig.	Aerobraking Data	SCT	NAV	Jim Neuman

SCT.MC **Spacecraft Team - Mission Control (SCT.MC)**

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
MC-005	A	Duty Roster / Schedule (The "On-Call" list")	SCT.MC	NAV, FOS.DSOT, SEQ	Jim Neuman
MC-006	A	Mission Controllers Real-Time Operations Log	SCT.MC	FOS.DAA	Jim Neuman

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OPERATIONAL INTERFACE AGREEMENTS

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Planning & Sequence Team

SEQ		**Sequence**		**[SEQ]**	
OIA #	**Rev.**	**Product Name**	**Gen. Function**	**Receiving Function**	**Originator**
SEQ-001	B	Spacecraft Activity Sequence File (SASF)	MP, SEQ, SCT, SOT	NAV, SCT, SEQ, S.SIT,F.DAA	Peter Carberry
SEQ-002	B	Predicted Events File (PEF)	SEQ	NAV,SCT,SEQ,SOT.SIT	Peter Carberry
SEQ-003	Orig.	STL Predicted Events File (SPEF)	SEQ	SCT.STL	Peter Carberry
SEQ-004	Orig.	Desired Memory Word File (DMWF)	SEQ	SCT	Peter Carberry
SEQ-005	A	Spacecraft Message File (SCMF)	SEQ	SCT, FOS.DAA	Peter Carberry
SEQ-006	A	SEQTRAN Runlogs	SEQ	SCT, FOS.DAA	Peter Carberry
SEQ-007	B	Sequence Review Comments	All Teams	SEQ	Peter Carberry
SEQ-008	B	SEQGEN Output Product (FINCON)	SEQ	SCT, FOS.DAA	Peter Carberry
SEQ-009	A	Ground Command File (GCMD)	SEQ	SCT.MC	Peter Carberry
SEQ-010	A	Sequence of Events (SOE)	SEQ	SCT, NAV, F.DAA, F.DSN, F.DSOT, SOT	G. M. Vaughan
SEQ-011	A	Space Flight Operations Schedule (SFOS)	SEQ	SCT, NAV, SOT,F. DAA ,F.DSN, F.DSOT	G. M. Vaughan
SEQ-012	B	SOE/SFOS "Redlines"	SEQ	SCT, NAV, SOT, F.DAA, F.DSN, F.DSOT	G. M. Vaughan
SEQ-013	B	DSN Keyword Files	SEQ	FOS.DSN,FOS.DAA, SCT.MC, NAV	G. M. Vaughan

RES		**Resource Scheduling**		**[RES]**	
OIA #	**Rev.**	**Product Name**	**Gen. Function**	**Receiving Function**	**Originator**
RES-001	A	DSN Allocation File	RES	NAV, SEQ, SCT, FOS.DAA	Belinda Arroyo
RES-002	A	DSN Configuration Codes	RES	SCT.MC, SEQ, FOS.DAA	Belinda Arroyo

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SOT **Science Operations Team**

S.RST **Radio Science Team (SOT.RST)** [SOT.RST]

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
RST-002	A	Radio Science Trigger Files	SOT.RST	SEQ	Mick Connally

S.SIT **Science Instruments Team (SOT.SIT)** [SOT.SIT]

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
SIT-001	A	Instruments Status Report	SOT.SIT	ALL TEAMS	Tom Thorpe
SIT-002	-	Inputs to E-Kernel	SOT.SIT	DAA	Tom Thorpe

Navigation Team

NAV [NAV]

OIA #	Rev.	Product Name	Gen. Function	Receiving Function	Originator
NAV-001	A	LIGHT TIME FILE	NAV	FOS.DSN, SCT,SEQ,SOT, FOS.DAA	Pat Esposito
NAV-002	A	STATION POLYNOMIAL FILE (STATRJ)	NAV	FOS.DSN, SCT	Pat Esposito
NAV-003	A	SPACECRAFT EPHEMERIS FILE (P-FILE)	NAV	FOS.DSN	Pat Esposito
NAV-004	A	NAVIGATION TRIGGER FILE	NAV	SEQ	Pat Esposito
NAV-005	A	ORBIT PROPAGATION, TIMING & GEOMETRY FILE	NAV	SCT, SEQ, SOT.SIT, FOS.DAA	Pat Esposito
NAV-006	A	SP KERNEL (SPK) FILE	NAV	SCT, SEQ, SOT.SIT, FOS.DAA	Pat Esposito
NAV-007	A	PLANETARY CONSTANTS KERNEL (PCK) FILE	NAV	SCT, SEQ, SOT.SIT, FOS.DAA	Pat Esposito
NAV-008	A	MANEUVER PROFILE FILE (MPF)	NAV	SCT, FOS.DAA	Pat Esposito
NAV-009	A	ORBIT NUMBER FILE	NAV	SOT.SIT, FOS.DAA	Pat Esposito

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

INTRODUCTION

1.0 Purpose and Scope

Volume 5, Part 2 Specifies the inter-team Operational Interface agreements (OIAs) for the Mission Operations System. Any interface for a product and/or service that has been identified and documented using an OIA will reside in this document.

Only those interfaces which concern on-going flight operations and require an OIA with any team within the Mission Operations System will be published in this document.

2.0 OIA Description

As a minimum, the standard OIA will contain:

a. product name
b. generating team
c. receiving team
d. originator
e. product description
f. format and content
g. reference SIS's
h. product delivery timing and frequency
i. applicable mission phase
j. method of delivery
k. team(s) signature
l. OIA number
m. revision
n. date

An index will be included in each folder followed by the individual interface agreements. Only signed (by each identified) agreements will be published in the final version of this document.

3.0 Responsibility

The negotiation and acquiring the proper signatures on any OIA will be specified below. Unless otherwise negotiated, the following rules will apply for gathering signatures on the initial OIA.

1) For an OIA between two teams, the receiver of the product/service will be responsible for negotiations and the proper signatures.

2) For an OIA between three or more teams, the generator of the product/service will be responsible for negotiations and the proper signatures.

3) The Real Time Operations Team will be responsible for the OIA coordination and publication.

4.0 Change Control

This document will not be subject to change control. The decision to change any OIA will remain at the team(s) level, unless otherwise negotiated.

5.0 Signature Authority

Signature authority for the release of this document (542-409 Volume 5, Part 2) and any changes to the introduction folder will be the Mission System Manager.

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OVERVIEW

This Document has 17 Sheets or Folders in it. The Folders have from one to seventeen pages in them. The Folders are set up for 75% size viewing and 100% size for printing. Only the " Table of Contents" Folder is set up with grid viewing and printing. The individual Folders can be viewed by Clicking the left mouse button on the Folder tab at the bottom of the Document Workbook. Individual pages can be viewed quickly by clicking between the arrows on the right-hand scroll bar. Individual OIAs can be printed out by clicking on print in the file menu. In the pop-up window, type in the page number(s) listed in the Index for the OIA(s) to be printed. Then enter or click OK. If the entire Workbook or Document is needed click on Entire Workbook and then enter or click OK. If just the contents of an entire Folder is needed just click on the print Icon in the Toolbar.

There is an "Instruction" and "Template" Folder, if the need arises to draft a new OIA.

The original or signed OIA Document will be kept in the library by the MGS Documentarian.

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

INSTRUCTIONS

OIA #	Unique interface identifier with team acronym and three digit number.	**OIA #**	XXX-001
Rev.	Interface revision identifier, i.e., A, B, C, etc.	**Revision:**	Orig.
Date	The date that the interface was created.	**Date:**	4/21/95

Product Name: The name of the product agreed upon by all of the teams that will authorize this OIA.

Generating Team: Acronym for the team that will produce the product e.g., DSN, NAV, RTOT.

Receiving Team(s): Acronym for the team or teams that will receive the product.

Originator: The person and team responsible for producing the OIA and obtaining signatures.

Product Description:

A description of the product including how it is produced (specify the software subsystem if appropriate) and the purpose of the interface. The interval of time for which the data is provided should also be specified, e.g., spacecraft ephemeris covering a fourteen day period.

Insert row cells and then make this space as large as needed for text.

Format and Content:

The product that is transferred and the product's format should be specified. If any special type of form or template is required, it shall be part of the OIA.

Insert row cells and then make this space as large as needed for text.

Reference SIS(s):

An SIS describes an electronic transaction between Data System Elements. An OIA can reference an SIS for the description of a product that is deliverable from a Data System Element.

Product Delivery Timing & Frequency:

Specify the time of day and frequency of delivery, e.g., 0800 UTC on every Monday, NAV radiometric data will be available in the PDB. Specify delivery timing relative to an appropriate epoch, if necessary, e.g., TCM-1 minus three days.

Insert row cells and then make this space as large as needed for text.

Applicable Mission Phases:

The period the agreement is valid. Examples are Project Duration or Encounter Phase or Launch Phase Only.

Method of Delivery:

This specifies how the product is delivered and the appropriate team(s) notified.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
The signature of the appropriate Team Chief or his/her Authorized Representative & date the OIA was signed.							

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

TEMPLATE

OIA #
Revision:
Date:

Product Name:

Generating Team:

Receiving Team(s):

Originator:

Product Description:

Format and Content:

Reference SIS(s):

Product Delivery Timing & Frequency:

Applicable Mission Phases:

Method of Delivery:

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

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FOS ***Flight Operations Team***

F.DSN **Deep Space Network (FOS.DSN)**

RECEIVING:
SIT-001
NAV-001,-002,-003
SEQ-010,-011,-012,-013
SCT-003

Canceled OIAs

DSN Daily Status Report	Dan Kiewicz
NOCC Trackon Controller's Log	Dan Kiewicz
DSCC (SCP) Data Recall Requests	Dan Kiewicz
NOCC Intermediate Data Records	Dan Kiewicz
DSN Support to Radio Science During Aerobraking	Dan Kiewicz
Radio Science Open-Loop RCVR Data Replays	Dan Kiewicz
ASCII Spacecraft Tracking Data Files	Dan Kiewicz
Extra Galactic Radio Source Catalog	D. J. Reece

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-001
Revision: B
Date: 7/15/96

Product Name: DSN VIEW-PERIOD FILES

Generating Team: FOS.DSN

Receiving Team(s): NAV, RES, SCT.MC, SEQ, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN View Periods files are generated at the beginning of the mission and updated after each new P-file delivery. The View Periods file will contain DSN 70M, 34M HEF and 34M BWG tracking station(s) rise and set times, antenna elevation data, and DSS transmitter turn-on constraints.
The new View Periods file would cover the complete term of the delivered P-file.

Format and Content: SFDU-formatted files as per DSN Doc. 820-13, OPS-6-15.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-SEG-DSN-ViewPrds

Product Delivery Timing & Frequency:
Upon receipt of a new P-file the viewperiods file will be regenerated.
The new viewperiods file will normally cover the term of the delivered P-file.
Only for special cases such as launch or encounter will long-term, one-time deliveries be made.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC to AMMOS/MSOP PDB (via CISCO) electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, and OPS-6-20-2.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	SCT	J. Neuman		7/31/96
NAV	Pat Esposito		7/29/96	SEQ	Bobby Brooks		96-07-25
RES	Belinda Arroyo	B. Arroyo	7/25/96	S.RST	Mick Connally		7-25-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-002
Revision: B
Date: 6/20/96

Product Name: DSN 8-WEEK OPERATIONS PLANNING FORECAST

Generating Team: FOS.DSN

Receiving Team(s): RES

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN 8-Week Operations Planning Forecast will contain a multimission listing of DSN resources designated to support the MGS tracking and data acquisition requirements of the project.

Format and Content: SFDU-formatted files as per DSN Doc. 820-13, OPS-6-16.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-SEG-DSN-Allocation

Product Delivery Timing & Frequency:
The DSN will make the DSN 8-Week Operations Planning Forecasts available to the Project as produced every 4th week, delivered Fridays, NLT 1:00 pm. The period covered by the 8-Week Planning Forecast places the listed events at the conclusion of the 8th forecast week; 9 weeks and 2 days ahead of the Forecast's scheduled production date.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC to AMMOS/MSOP PDB (via CISCO) electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, and OPS-6-20-2.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	RES	Belinda Arroyo	B. Arroyo	7/25

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-003
Revision: B
Date: 6/20/96

Product Name: DSN 7-DAY OPERATIONS SCHEDULE

Generating Team: FOS.DSN

Receiving Team(s): NAV, RES, SCT.MC, SEQ

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN 7-Day Operations Schedule will contain a listing of the currently scheduled DSN resources designated to support the MGS tracking and data acquisition requirements.
The DSN NOCT will make the 7-Day Operations schedule and subsequent Change Log files available to the Project as they are generated and posted on the CC:Mail\Bulletinboard\DSN Schedule to be accessed as needed.

Format and Content: SFDU-formatted file as per DSN Doc. 820-13; OPS-6-16

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-Filexfer
SFOC-1-SEG-DSN-Allocatn

Product Delivery Timing & Frequency:
Produced weekly, available no later then 1:00 pm. Friday of the preceding week with Change Log updates as generated.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC to AMMOS/MSOP PDB (via CISCO) electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, and OPS-6-20-2.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-15-96	SCT	J. Neuman		7/31/96
NAV	Pat Esposito	P.B. Esposito	7/15/96	SEQ	Bobby Brooks		96-07-15
RES	Belinda Arroyo	B. Arroyo	7/15/96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-004
Revision: B
Date: 6/20/96

Product Name: INTER-CENTER VECTORS

Generating Team: FOS.DSN

Receiving Team(s): NAV

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:
The DSN NAV Team will forward to the MGS NAV Team the set of MGS Inter-Center Vectors (ICVs) immediately upon receipt.

Format and Content: as per DSN Doc. 820-13; TRK-2-26.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1.

Product Delivery Timing & Frequency:
During the launch phase all ICVs will be immediately forwarded upon receipt from launch operations to DSN NAV and MGS NAV.

Applicable Mission Phases: Pre-launch through launch.

Method of Delivery:
DSN Network Operations Control Center (NOCC) NAV computer to MGS NAV computer (via OSCAR) in accordance with the DSN NOCC External User File Transfer Procedure.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-15-96	NAV	Pat Esposito	P. B. Esposito	7/15/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-005
Revision: B
Date: 7/15/96

Product Name: ORBIT DATA FILES (ODFs)

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN will generate an ORBIT DATA FILE (ODF) as a resident file in the DSN NAV computer. ODFs will contain edited radiometric data used to navigate the spacecraft, & range data which will include calibrations & corrections for station & spacecraft delay. The file will contain data received during the preceding 24 hour day, 0700Z to 0700Z. Project NAV will be provided access to the ODFs and may copy the file as needed.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-18 and TRK-2-28.
Primary format: Bit-orientated binary files as per DSN Doc. 820-13; TRK-2-18.
Backup format: SFDU-formatted files as per DSN Doc. 820-13; TRK-2-28.

Reference SIS(s):
DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing & Frequency:

During the **Cruise Phase** files shall be delivered daily. During periods of intense navigation activity (such as injection, TCMs, and Planetary Orbit Insertion maneuvers (Aerobraking), etc.) the file shall be delivered within one (1) hour after the end of the tracking pass. Partial data files shall be required within five (5) min. as a goal, ten (10) min. nominally after a NAV requested data cut-off during critical periods.

During the **Mars Orbit Insertion (Aerobraking) Phase** the file shall be delivered within five (5) min. as a goal, ten (10) min. nominally after any data cut-off requested by Project NAV. The **Aerobraking Phase** is currently planned to last up to six (6) months for Mars Orbit Insertion, including an approximate one (1) month "critical" aerobraking period situated near the end of the aerobraking phase. During routine aerobraking operations it is expected that two (2) ODF deliveries daily will be sufficient, and that during critical aerobraking operations as many as four (4) ODF deliveries may be required. (NOTE: This delivery schedule is defined not as a constraint, but as a guideline.)

During the **Orbital Phase** (post-aerobraking) the ODF will be available to the NAV Team:

(a) before 5:00 PM (local) the same day for any tracking pass that ends between midnight and noon (local)(except on weekends and holidays);

(b) before 9:00 am (local) the next day for any tracking pass that ends between noon and mid-night (local)(except on weekends and holidays);

For **Propulsive Maneuvers** during the orbit insertion phase, the ODF will be provided within one (1) hour of the pass conclusion.

During **Mapping** the ODF shall be delivered within one (1) hour after the end of and pass during which a propulsive maneuver occurs. This requirement is subject to the same delivery guidelines as specified for the orbital phase.

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-005

Applicable Mission Phase: Launch through end of mission.

Method of Delivery:
The primary method of delivery will be DSN NAV RDC-1 Alpha to MGS NAV via OSCAR into directory NAVOPS$DISK:[NST.SC94].

The backup method of delivery will be NOCC to AMMOS/MSOP PDB via CISCO electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, and OPS-6-20-2, and the "DSN NOCC to External User File Transfer Procedures". The backup method of delivery is only required if the primary method is not satisfied. When the primary delivery path is restored, all files delivered to the backup path will be delivered again via the primary path.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	S.RST	Mick Connally		7-25-96
Nav	Pat Esposito		7/24/96	F.DAA	John Swift		7-25-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-007
Revision: B
Date: 7/15/96

Product Name: ARCHIVAL TRACKING DATA FILES (ATDF)

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SOT.RST

Originator: D. J. Recce

Product Description:
Radio metric data will be accumulated on the Archival Tracking Data File (ATDF). The ATDF will contain all received radio metric data. The DSN will generate ATDFs as a resident file in the NOCC NAV computer. The MGS NAV and Radio Science Teams will be provided access to the ATDFs and may copy the files as needed.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-25 and TRK-2-28.

Reference SIS(s):
DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing & Frequency:
Normal ATDF delivery is when the file is "full", containing approximately 100,000 samples.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
Primary method of delivery will be DSN NOCC to AMMOS/MSOP via OSCAR into directory NAVOPS$DISK:[NST.SC94]. The backup method of delivery will be DSN NOCC to AMMOS/MSOP via CISCO electronic file delivery operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, and OPS-6-20-2, and the "DSN NOCC to External User File Transfer" procedures.

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-21-96	S.RST	Mick Connally		
NAV	Pat Esposito	PB Esposito	7/24/96	F.DAA	J. Swift		7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-008
Revision: B
Date: 7/15/96

Product Name: TRACKING STATION (DSS) LOCATIONS

Generating Team: FOS.DSN

Receiving Team(s): NAV

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

Tracking Station Location Files contain the station location coordinates (cylindrical) with an estimate of the error covariance's of the coordinates; 3 Sigma accuracy is longitude = 0.69 meters, spin radii = 0.54 meter and distance perpendicular to earth equitorial plane = 0.70 meter.

Format and Content: As per DSN Doc. 810-5 Capabilities; GEO-10, Rev. C.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1

Product Delivery Timing & Frequency:
Prior to start of MSOP GDS testing and when DSS Locations files are updated.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC to MSOP PDB via OSCAR to directory NAVOPS$DISK:[TSAC.MGS] using electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, OPS-6-20-2 and DSN NOCC to External User File Transfer procedures.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	NAV	Pat Esposito		7/29/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-009
Revision: B
Date: 6/20/96

Product Name: WEATHER DATA

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SCT, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:
The DSN Tracking System Analytical Calibrations (TSAC) Weather Data Files which contain data of the DSN tracking station's local weather conditions. The source for this data is the DSCC Media Calibration Subsystem (DMD) from which the data is retrieved and maintained on NOCC NAV VAX. Nominal data sampling rate is once per hour.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-24 and TRK-2-28.

Reference SIS(s):
DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing and Frequency:
This file will be provided and updated monthly, with file delivery by Friday, no later then 12:00 noon, of the first week of the new month and accessed as needed. More (or less) frequent update schedules, and data sampling rates can be negotiated for selected periods.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC to MSOP via OSCAR to directory NAVOPS$DISK:[TSAC.MGS] using electronic file transfer operations in accordance with DSN Doc. 820-13; OPS-6-18, OPS-6-20, OPS-6-20-1, OPS-6-20-2 and DSN NOCC to External User File Transfer procedures.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-15-96	SCT	Jim Neuman		
NAV	Pat Esposito	P. B. Esposito	7/15/96	S.RST	Mick Connally		
F.DAA	J. Swift	John Swift	7-15-96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-011
Revision: A
Date: 7/15/96

Product Name: UNIVERSAL TIME & POLAR MOTION (UTPM) FILE

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SCT, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:
The (TSAC) Earth Polar Motion data and Time Corrections file. The sources for this data are the JPL TEMPO team and International Earth Rotation Service (IERS) from which the data is retrieved and a file maintained on the NOCC NAV VAX.
The UT&PM file is scheduled to be replaced by the Earth Orientation Parameters (EOP) file, reference DSN to MSOP OIA No. DSN-016.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-21 and TRK-2-28.

Reference SIS(s):
DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing & Frequency:
During the Cruise phase this file will be provided and/or updated weekly with file delivery on each Friday, no later then 12:00 noon, and accessed as needed. During the Encounter (aerobraking) phase the file will be updated twice weekly, Tuesdays and Fridays, no later then 12:00 noon, and accessed as needed.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
Primary method of delivery: NOCC to MSOP via OSCAR to directory NAVOPS$DISK:[TSAC.UTPM] using electronic file transfer operations in accordance with DSN Doc. 820-13;OPS-6-18, OPS-6-20, OPS-6-20-1, OPS-6-20-2 and DSN NOCC to External User File Transfer procedures. The backup method of delivery is to the PDB. The back-up method of delivery is only required if the primary method is not satisfied. When the primary delivery path is restored, all files delivered via the back-up path shall be delivered via the primary path.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	SCT	Jim Neuman		7/31/96
NAV	Pat Esposito		7/29/96	S.RST	Mick Connally		7-25-96
F.DAA	John Swift		7-25-96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-012
Revision: B
Date: 7/20/96

Product Name: MEDIA CALIBRATION DATA FILES

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:
The DSN Tracking System Analytical Calibrations (TSAC) Media Calibration Data files contain calibrations/corrections for the effects of transmission media (tropospheric, ionospheric, and solar plasma) on radio metric data. The source is the DSCC Media Calibration Subsystem (DMD) from which the data is retrieved and a file maintained on the NOCC NAV VAX.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-23 and TRK-2-28.

Reference SIS(s):

DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing & Frequency:
For Launch and during the Cruise phase the Tropospheric (seasonal model) data will be delivered once, pre-launch no later then Launch -90 days. The Ionospheric data file will be updated weekly with file delivery on each Friday, no later then 12:00 noon, and accessed as needed.
During the Encounter (aerobraking) phase the Tropospheric file will be updated monthly.
he Ionospheric data file will be updated daily, no later then 12:00 noon, and accessed as needed.
More (or less)frequent update schedules can be negotiated for selected periods.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
Primary method of delivery from NOCC to MSOP via OSCAR to directory NAVOPS$DISK:[TSAC.MGS] via electronic transfer operations in accordance with DSN Doc. 820-13; OPS-6-18; OPS-6-20, OPS-6-20-1 and OPS-6-20-2 and DSN NOCC to External User File Transer procedures. The backup method of delivery (to the PDB) is only required if the primary path is not satisfied. When the primary path is restored, all files deliverred to the back-up path will be delivered again via the primary path.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-22-96	S.RST	Mick Connally		7-25-96
NAV	Pat Esposito	PB Esposito	7/24/96	F.DAA	J. Swift		7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-013
Revision: A
Date: 6/20/96

Product Name: RADIO SCIENCE & OPEN-LOOP RX Tuning Predicts

Generating Team: FOS.DSN

Receiving Team(s): SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN (SE) will generate Open-Loop Receiver Frequency Tuning predicts in support of scheduled MGS radio science activities. A copy of these predicts will be forwarded to the MSOP project SOT.RST prior to the event.

Format and Content:
Text file; available to the project SOT.RST in a machine readable format.

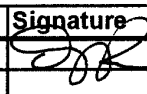
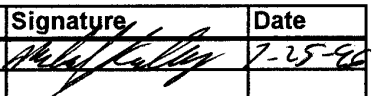
Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1

Product Delivery Timing & Frequency:
Open-loop receiver frequency tuning predicts will be produced and forwarded to the Project SOT.RST a minimum of 72 hours prior to the scheduled radio science event.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
NOCC NSS (via RASM) available for Project SOT.RST retrieval as required.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	S.RST	Mick Connally		7-25-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-014
Revision: B
Date: 6/20/95

Product Name: RFI PREDICTS

Generating Team: FOS.DSN

Receiving Team(s): SCT.MC

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN RFI Analyst (SE) will provide a list of potential RFI Conditions from known satellites operating in or near the DSN S- and/or X-band operating frequencies.

Format and Content: Text message; IOM and/or cc:Mail.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1

Product Delivery Timing & Frequency:
On a weekly basis, not later than eight (8) hours prior to the end of the previous list.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery: IOM and/or cc:Mail message.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	SCT	J. Neuman		7/31/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-015
Revision: B
Date: 6/20/96

Product Name: CLOCK AND FREQUENCY OFFSET INFORMATION

Generating Team: FOS.DSN

Receiving Team(s): NAV

Originator: Dave Recce

Product Description:
CLOCK AND FREQUENCY OFFSETS ARE MEASUREMENTS OF THE TIME AND FREQUENCY OFFSETS BETWEEN THE HYDROGEN MASERS AT EACH DSN TRACKING SITE AND ARE ROUTINELY PROVIDED IN THE FREQUENCY AND TIMING SUBSYSTEM (FTS) WEEKLY REPORT. THIS REPORT CONTAINS CLOCK OFFSET MEASUREMENTS (IN MICROSECONDS) AND FREQUENCY OFFSETS (DELTA-F/F; UNITLESS) OVER A TEN DAY INTERVAL.
THIS INFORMATION IS USED TO CALIBRATE THE DIFFERENCED-DOPPLER DATA.

Format and Content:
CLOCK AND FREQUENCY OFFSETS ARE ROUTINELY PROVIDED IN THE FTS WEEKLY REPORT.

Reference SIS(s): N/A

Product Delivery Timing & Frequency:
INTERPLANETARY: WEEKLY
ORBIT INSERTION: TWICE WEEKLY DURING AEROBRAKING AND GRAVITY CALIBRATION.
MAPPING: TWICE WEEKLY DURING EDGE-ON ORBITAL CONFIGURATIONS (CENTERED ON 10/29/98 & 02/19/99) (EXCEPT WEEKENDS).

Applicable Mission Phases: INTERPLANETARY, ORBIT INSERTION AND MAPPING.

Method of Delivery: E-MAIL, FAX, TWX or Administration Message Service (AMS).

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	NAV	Pat Esposito	P B Esposito	7/29/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-017
Revision: B
Date: 7/25/96

Product Name: DSS PASS LOGS/RECORDS ARCHIVE

Generating Team: FOS.DSN

Receiving Team(s): NAV, SCT, FOS.DAA, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:

The DSN DSS Pass Logs (LMC log; an electronic events record) maintained from scheduled DSS AOS to LOS as recorded on the JPL GCF CDR. This information will be made available for analysis of pass events, station configuration, for problem/failure investigation by specified pass and/or specified time(s). Delivery of the DSS LMC logs will be by special request made through the MSOP NOPE.

Format and Content: Paper (Handwritten) or ASCII text file (Electronic).

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333.

Product Delivery Timing & Frequency:
Recommended: Delivered upon request made through the MGS NOPE office.
DSS Pass Log/Records Archive file would have a normal retention period of 30 days.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
All paper records via JPL mail system or hand carried. All electronic records via NIS FTP or INTERNET: http://dsn.jpl.nasa.gov
IP addressses are required for access to the database. Any changes need to be coordinated through the NOPE.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-29-96	SCT	Jim Neuman		7/31/96
F.DAA	John Swift		7-15-96	S.RST	Mick Connally		7-25-96
NAV	Pat Esposito		7/29/96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: FOS. DSN-018
Revision: Orig.
Date: 6/20/96

Product Name: EARTH ORIENTATION PARAMETERS (EOP) FILE

Generating Team: FOS.DSN

Receiving Team(s): FOS.DAA, NAV, SCT, SOT.RST

Originator: D. J. Recce

Product Description:
The DSN will provide the MSOP Project with the following service or product:
The (TSAC) Earth Orientation Parameters data and Time Corrections file. The sources for this data are the JPL TEMPO team and International Earth Rotation Service (IERS) from which the data is retrieved and a file maintained on the NOCC NAV VAX.
The EOP file is scheduled to replace the Universal Time & Polar Motion file, reference DSN to MSOP OIA No. DSN-011.

Format and Content:
SFDU-formatted files as per DSN Doc. 820-13; TRK-2-21 and TRK-2-28.

Reference SIS(s): DSN Network Opns Plan for MGS; DSN Doc. 870-333, Vol. 1
SFOC-1-CDB-ANY-Catalog2
SFOC-1-SYS-DSN-FileXfer
SFOC-1-NAV-DSN-MetricDta

Product Delivery Timing & Frequency:
During the Cruise phase this file will be provided and/or updated weekly with file delivery on each Friday, no later then 12:00 noon, and accessed as needed. During the Encounter (aerobraking) phase the file will be updated twice weekly, Tuesdays and Fridays, no later then 12:00 noon, and accessed as needed.

Applicable Mission Phases: Pre-launch through end of mission.

Method of Delivery:
Primary path: NOCC to MSOP (via OSCAR) electronic file transfer operations in accordance with DSN Doc. 820-13;OPS-6-18, OPS-6-20, OPS-6-20-1, OPS-6-20-2 and DSN NOCC to External User File Transfer procedures.
Backup path: via INTERNET http://epic/nav/eop/eop.html

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
F.DSN	D. Recce		7-15-96	SCT	Jim Neuman		7/31/96
NAV	Pat Esposito	P.B. Esposito	7/15/96	S.RST	Mick Connally		
F.DAA	John Swift		7-15-96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

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FOS ***Flight Operations Support***

F.DSOT **Data Systems Operations Team (FOS.DSOT)**

Rev.	Doc. #	Product Name	Originator	Date
Orig.	DST-001	DSOT Capabilities Document This Document takes the place of OIAs.	Carl Pregozen	9/15/95
		RECEIVING: SEQ-010,-011,-012 SCT-003, -014 MC-005		
		Canceled OIAs:		
		Real Time Data Recall	Curtis Eaton	
		820-13, Simulated Telemetry 3-20 & Monitor 5-15 Data	Curtis Eaton	
		Channel Data File (Engineering & Monitor Data)	Curtis Eaton	
		Operations Controllers Log	Curtis Eaton	

DST-001, Rev. Orig. PRELIMINARY

DSOT Capabilities Document

Prepared by:

C.B. Pregozen
Data Systems Operations Team

Approved by:

C.A. Eaton, Manager
Data Systems Operation Team

J.R. McClure, Acting Deputy Manager
Space Flight Operations Section

H.W. Woo, Manager
Space Flight Operations Section

This Capabilities Document supersedes any current individual project interface agreement and thus serves as the DSOT Support Agreement for flight projects. Should a specific project requirement arise that is not addressed by this document, an individual project interface agreement will be developed for that requirement.

DSOT's PRODUCT:

DSOT shall provide project-specific support related to five categories of data: tracking, radio science, command, spacecraft telemetry, and DSN monitor. This data support is divided into realtime, non-realtime, and test responsibilities.

Command:

DSOT validates the end-to-end ground command system for all DSOT-supported uplink activity. The ground command system is comprised of:

1) MGSO Multimission Command System (MCS)

2) MGSO Ground Communication Interface System (GIF)

3) DSN Command Processor Assembly (CPA)

Validation requires configuring the MGSO Multimission Command System for the specific project, allocating the communicator, verifying project specific database connectivity, and verifying control of the station command processor assembly. Upon completion of a validation or of a command data transfer, DSOT turns over the green command system to the project in CAL-2 mode.

7-25-96

When a command data transfer is requested by project personnel, DSOT builds and sends the spacecraft-specific test-commands for the transfer.

If problems occur with the command link at any time, re-validation is performed for the entire end-to-end ground command system.

DSOT issues Kerberos tickets on each project command system to provide PDB secured access for project users with assigned privileges. Users can then add, replace and delete ancillary files.

Through use of individual project databases (PDBs), DSOT maintains access to and storage of spacecraft commands and command ancillary data, including SCMFs, SDRs, LITETIME files, and any other data object types defined in project requirements.

DSOT provides access to simulated CPA software for purposes of testing and training.

Spacecraft Telemetry, Tracking, and DSN Monitor:

For telemetry, tracking, and monitor data, DSOT fulfills four main objectives: decommutation, logging, distribution, and accounting.

Project unique Telemetry Input Subsystem (TIS) applications are run for each scheduled realtime tracking pass. The TIS output consists of channelized and unchannelized data of each of the following types: telemetry, QQC, radiometric, tracking and DSN 5-9 and 5-15 monitor data.

With project-supplied sclk/scet correlation files, the TIS inserts the spacecraft event time into the data. The TIS also connects to a Reed-Solomon system for decoding of these data frames.

DSOT compiles and installs project-provided decommutation maps into project-specific decommutation systems (the TISs).

With received data, DSOT performs decommutation, error-checking, processing, distribution, and possible retransmission. DSOT's error-checking function, in particular, involves complete familiarity with spacecraft telemetry formats and sometimes requires hand-decommutation of data.

DSOT broadcasts telemetry, monitor, QQC, and tracking data on as many as eight different channels per project. Standard configurations dictate one channel for the project-designated prime station and channel. Other channels are used for back-up TGC channels, upcoming stations, replays, and special configurations.

Data Storage and Archiving:

DSOT loads telemetry, monitor, QQC, tracking, and radio science data to individual project Telemetry Delivery Subsystems (TDSs) in near real time. Slave TDSs are loaded from the DSOT master TDS. There may be multiple slave TDS machines throughout the network depending upon the project's requirements.

DSOT stores processed data for further distribution through a number of project-initiated query mechanisms. Data may be accessed by the user through the Telemetry Output Tool (TOT) located at the user's workstation. Each project's Data Records Team can access data using the tcp2dts program. DSOT runs this program on a local node for each project.

DSOT archives processed GIF data on a long-term basis for all projects. TIS processed data may be archived as negotiated by project. This data is kept available for potential later reprocessing or analysis.

SIMULATION:

DSOT generates simulated telemetry, specific to each spacecraft's telemetry formats, as well as monitor data for use in-house or to be sent to stations. Simulation data is sent to an SPC site via file transfer protocol and flowed back to DSOT systems along the same path as realtime data.

Short loop testing is performed in-house by Simulation using project specific Data Definition Language that is compiled for data flow to a GIF. Connection to the GIF is established using a virtual circuit and flowed through the entire system along the same path as realtime data.

DATA FORMATS:

Provided data products fit the descriptions defined in 820-13 series documentation for telemetry, monitor, radio science, tracking, and command data.

TIMING:

Routine Processing:

Data are distributed in real time by broadcast. Data are also logged and made available through query support provided by DSOT.

DSOT recalls necessary data post-pass. DSOT reprocesses and merges data received on the ground that was not captured in real time within 12 hours of its availability to DSOT.

Operational Testing:

As required and scheduled.

Special Requests:

Special requests should be made on weekdays between 7:00 a.m and 3:00 p.m. local time. Product delivery time will be variable and depends upon the nature and frequency of the request, impact to realtime operations, availability of necessary personnel, and functionality of DSOT hardware and software.

Since the specific parameters of a special request cannot be anticipated, response time will be negotiated in each case as these parameters become clear.

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

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DAA ***Data Administration and Archive***

RECEIVING:
SIT-001,-002
NAV-001,-005,-006,-007,-008,-009
SEQ-001,-005,-006, -008,-010,-011,-012,-013
RES-001
DSN-005,-007,-009,-011,-012,-018
DST-001
DAA-001
SCT-003,-014
MC-006

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #DAA.001
Revision: A
Date: 6/20/96

Product Name: SPICE Leap Second File

Generating Team: DAA {NAIF} {Navigation Ancillary Information Facility}

Receiving Team(s): SCT, NAV, SOT, FOS. DAA

Originator: John Swift

Product Description:
The Spice Leap Second File(LSK) is a file contained in the NAIF toolkit used for converting between Universal Time Coordinated (UTC) and Barycentric Dynamically Time, also referred to as Ephemeris Time (ET). The LSK is needed by all users of the NAIF toolkit.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): MGS DSR019 (MO DRSE019).

Product Delivery Timing & Frequency:
The need to add or subtract a leapsecond cannot be predicted and is announced by the International Earth Rotation Service only a few months in advance of the effective date. The updated file shall be delivered no later than 14 days prior to the effective date. New Leapseconds frequently take place on January 1 at 00:00:00, and occasionally on July 1 at 00:00:00.

Applicable Mission Phases: All

Method of Delivery: DAA {NAIF} transfers the file via E-mail to DAA
DAA transfers the file to the PDB via the MGS OPS LAN.
The DAA serves as an intermediary placing the SPICE Leap Second File on the PDB for the NAIF

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
DAA	John Swift		7-15-96	SCT	Jim Neuman		7/25/96
{NAIF}	Chuck Acton		7-25-96	SOT	Tom Thorpe		7/25/96
NAV	Pat Esposito		7/15/96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #DAA.002
Rev.: A
Date: 6/20/96

Product Name: E-Kernel

Generating Team: DAA

Receiving Team(s): SOT.RST, SOT.SIT

Originator: John Swift

Product Description:
The E-Kernel is one of the five basic data elemental SPICE data kernels. It contains "event information," that includes the science objectives, nominal sequences, real-time commanding, unscheduled events, and experimenter's notebook comments.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): DRS001

Product Delivery Timing & Frequency:
E-Kernel will be made for each of the sequence loads uplinked to the S/C. The E-Kernel files will cover the same time period as the sequence load and have the same name as the sequence loads. E-Kernel files will be generated 14 days after the completion of each sequence load and stored in the PDB. Every six months in cruise and three months in mapping the E-Kernels accumulated on the PDB will be written to CD and delivered to SOT. The accumulated E-Kernels will then be off-lined from the PDB to make room for new E-Kernels.

Applicable Mission Phases: All

Method of Delivery:
File transferred to PDB via the MGS OPS LAN and CDs delivered to SOT.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
DAA	John Swift	John Swift	7-15-96	SOT	Tom Thorpe	TS Thorpe	7/26/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #DAA.003
Revision: A
Date: 6/20/96

Product Name: QQC Summary Report

Generating Team: DAA

Receiving Team(s): SCT.MC, SCT, SOT.RST, SOT.SIT

Originator: John Swift

Product Description:
The QQC Summary Report is generated by the Mars Global Surveyor Mission Operations Assurance Team and stored in the PDB as an ASCII file to provide project users with quality, quantity, and continuity information relative to the spacecraft telemetry stream data.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): DRS012

Product Delivery Timing & Frequency:
QQC Summary Report File will be generated for each UTC day of the primary mission. The QQC Summary File will be available on the PDB 24 hours after the receipt of the last data to be loaded on the TDS. Every six months in cruise and three months in mapping the QQC Summary Report Files accumulated on the PDB will be written to CD.

Applicable Mission Phases: All

Method of Delivery: File transferred to PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
DAA	John Swift	John Swift	7-15-96	SCT	Jim Neuman	J Neuman	7/25/96
				SOT	Tom Thorpe	T Thorpe	7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #DAA-004
Revision: Orig.
Date: 6/20/96

Product Name: DAA Significant Events Report

Generating Team: DAA

Receiving Team(s): SOT.RST, SOT.SIT

Originator: John Swift

Product Description:
DAA Significant Events Report describes any relevant event effecting DAA's storage or archiving of science data. This information is ancillary to the SPICE Event Kernel.

Format and Content: ASCII data file enclosed in an SFDU wrapper

Reference SIS(s):

Product Delivery Timing & Frequency:
DAA Significant Events Report will be generated weekly for all mission phases. DAA Significant Events Report will be available on the PDB Mondays at 10:00 am local time for the previous weeks events. The report will cover a period from 0000 UTC Sundays to 2400 UTC Saturdays.

Applicable Mission Phases: All

Method of Delivery: File transferred to PDB via the MGDS OPS LAN

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
DAA	John Swift	J Swift	7-15-96	SOT	Tom Thorpe	T S Thorpe	7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # DAA.005
Rev.: Orig.
Date: 6/20/96

Product Name: DAA Science Data Progress Report

Generating Team: DAA

Receiving Team(s): SOT.RST, SOT.SIT

Originator: John Swift

Product Description:
The DAA Science Data Progress Report describes the weekly status of the DAA's science data processing. This information is ancillary to the SPICE Event Kernel.

Format and Content: ASCII data file enclosed in an SFDU wrapper

Reference SIS(s):

Product Delivery Timing & Frequency:
DAA Science Data Process Report will be generated for all mission phases. DAA Science Data Progress Report will be available on the PDB Mondays at 10:00 am local time for the previous week's status. The report will cover a period from 0000 UTC Sundays to 2400 UTC Saturdays.

Applicable Mission Phases: All

Method of Delivery: File transfer to PDB via the MGDS OPS LAN

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
DAA	John Swift	John Swift	7-15-96	SOT	Tom Thorpe	Tom Thorpe	7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

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SCT ***Spacecraft Team***

RECEIVING:
SIT-001
NAV-001,-002,-005,-006,-007,-008
SEQ-001,-002,-003,-004,-005,-006,-008,-009,-010,-011,-012,-013
RES-001, -002
DSN-001, -003, -009,-011,-014,-017, -018
DST-001
DAA-001,-003
SCT-003

Canceled SCT OIAs:

Flight Sequence SCT.STL Test Requirements	Jim Neuman
Ephemerides and Star Catalogs	Jim Neuman
Command Subsystem Standards & Limits	Jim Neuman
S/C Health and Status Summary	Jim Neuman
S/C Status Summary	Jim Neuman
Engineering Command Form (ECRF)	Jim Neuman
Channel Conversion Language (CCL) Updates	Jim Neuman

Canceled SCT.STL OIAs:

STL / SCS TLM Stream to DTF-21	Jim Neuman
STL / SCS Telemetry Tape to SIM	Jim Neuman
STL Sequence Output File	Jim Neuman
STL Miscompare Sequence Events File	Jim Neuman
STL Memory Dump File	Jim Neuman
STL Simulation Runlog	Jim Neuman

MARS GLOBAL SURVEYOR
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OIA # SCT-001
Revision: A
Date: 8/20/96

Product Name: Maneuver Performance Data File (MPDF)

Generating Team: SCT

Receiving Team(s): NAV, RST

Originator: Jim Neuman

Product Description:
The MPDF is a data file used in the maneuver design process by NAV and SCT. It contains spacecraft properties including spacecraft mass and the thrust vectors, effective thrust, and effective flowrates for thrusters and main engine.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

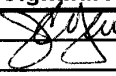
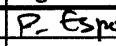
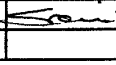
Reference SIS(s): EAE-008

Product Delivery Timing & Frequency:
Prior to each maneuver, except aerobraking corridor maneuvers. Timing relative to maneuver will vary with type of maneuver, and will be determined when specific maneuver planning commences.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		8/20/96	NAV	Pat Esposito		8/22/96
				RST	Mick Connally		8/22/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SCT-002
Revision: A
Date: 8/20/96

Product Name: Maneuver Implementation File (MIF)

Generating Team: SCT

Receiving Team(s): NAV, RST

Originator: Jim Neuman

Product Description:
The MIF is a data file used in the maneuver implementation process by NAV and SCT. It contains maneuver attitude, velocity, and statistical data using the NAV Maneuver Profile File as an input.

Here are the MPF parameters which must be added to the MIF information for pitch-over propulsive maneuvers (i.e. MOI):

PAXIS	3 double precision values which define the pitch axis in the EME2000 system.
PTHRAT	1 double precision value which specifies the pitch rate about PAXIS in degrees/second.

They may be supplied via E-mail, but at some schedule as the MIF file.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

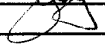
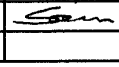
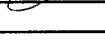
Reference SIS(s): EAE-014

Product Delivery Timing & Frequency:
Prior to each maneuver. Timing relative to maneuver will vary with type of maneuver, and will be determined when specific maneuver planning commences.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		8/20/96	NAV	Pat Esposito		8/22/96
				RST	Mick Connally		8/20/96

MARS GLOBAL SURVEYOR
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OIA # SCT-003
Revision: A
Date: 6/13/96

Product Name: SCT System Report

Generating Team: SCT

Receiving Team(s): All Teams

Originator: Jim Neuman

Product Description:
A text file describing the current status of the spacecraft, including subsystem health and performance assessments, significant red alarm violations, payload interface status, future impacts of abnormal spacecraft behavior, and miscellaneous data and comments.

Format and Content: Text file in Microsoft Word.

Reference SIS(s): EAE-006

Product Delivery Timing & Frequency: Weekly

Applicable Mission Phases: Project Duration.

Method of Delivery: File emailed to JPL and/or placed on Collaborative Server.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	SOT	Tom Thorpe		7/25/96
DAA	John Swift			F.DSN	Dave Recce		7/29/96
NAV	Pat Esposito		7/15/96	SEQ	Bobby Brooks		96-07-15

MARS GLOBAL SURVEYOR
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OIA # SCT-004
Revision: A
Date: 6/22/96

Product Name: C-Kernel

Generating Team: SCT

Receiving Team(s): SOT.SIT

Originator: Jim Neuman

Product Description:
The C-Kernel is a subset of SPICE which provides attitude reconstruction data (pointing angles and timing) for instrument calibrations.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

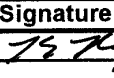
Reference SIS(s): EAE-007

Product Delivery Timing & Frequency: Within 14 days following each calibration event.

Applicable Mission Phases: Cruise, Orbit Insertion.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	SOT	Tom Thorpe		7/25/96

MARS GLOBAL SURVEYOR
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OIA # SCT-005
Revision: A
Date: 6/13/96

Product Name: Engineering Channel Parameter Table Update

Generating Team: SCT

Receiving Team(s): SOT

Originator: Jim Neuman

Product Description:
The Engineering Channel Parameter Table Update File contains data required to convert telemetry within the data stream from Data Numbers (dn) to Engineering Units (eu) by the Telemetry Processing System. The file contains conversion coefficients, baseline red alarm limits, and binary measurement interpretation data for each applicable engineering channel.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-022 (Ref. MO DACE-016).

Product Delivery Timing & Frequency: Once prior to launch and as required thereafter.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	SOT	Tom Thorpe		7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SCT-006
Revision: A
Date: 6/13/96

Product Name: Decom Map Updates

Generating Team: SCT

Receiving Team(s): SOT

Originator: Jim Neuman

Product Description:
The Decom Map Updates File contains the data required to decommutate engineering telemetry from the data stream by the Telemetry Processing System. The file contains commutator position and frequency for each engineering measurement.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-025 (Ref. MO DACE-029).

Product Delivery Timing & Frequency:
Once prior to launch and as required thereafter to accommodate onboard decommutation map changes.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	SOT	Tom Thorpe		7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SCT-008
Revision: A
Date: 6/22/96

Product Name: Telecom / SCT Trigger Files

Generating Team: SCT

Receiving Team(s): SCT.MC

Originator: Jim Neuman

Product Description:
The Telecom Trigger Files contain descriptors of the consequences of Telecom commanding events, used to trigger the insertion of status and information lines in the Keywords File produced by SEGS. It also includes timing, parameter and settings information for selected nonstandard Telecom events.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

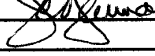
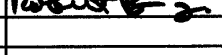
Reference SIS(s): EAE-020

Product Delivery Timing & Frequency:
Prior to each sequence in which a selected Telecom event will occur.
Due no later than the release of the PEF for the affected sequence.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	SEQ	Bobby Brooks		96-07-15

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SCT-009
Revision: A
Date: 8/20/96

Product Name: Angular Momentum Desaturation File

Generating Team: SCT

Receiving Team(s): NAV, RST

Originator: Jim Neuman

Product Description:
The Angular Momentum Desaturation File is reconstruction data containing actual momentum unload start & stop times, the number of pulses, dead time between pulses, pulsewidth, and impulse per pulse for each thruster during desaturations. It also contains the actual spacecraft orientation during the unload event. The information is used to model the delta-V imparted to the spacecraft by desaturations.

Format and Content: Text file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-003

Product Delivery Timing & Frequency:
Cruise: Once per thruster event.
Orbit Insertion: Commensurable with NAV requirements, ranging from every other day to 4 times per day.
Mapping & Relay: Daily, within one working day, covering all desaturation events in the previous 24 hours (72 hours over weekends).

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		8/20/96	NAV	Pat Esposito		8/22/96
				RST	Mick Connally		8/22/96

OIA # SCT-010
Revision: A
Date: 6/20/96

Product Name: Navigation Engineering Information File (NEIF)

Generating Team: SCT

Receiving Team(s): NAV

Originator: Jim Neuman

Product Description:
The Navigation Engineering Information File contains information used to model solar radiation pressure. It describes the spacecraft configuration and the solar reflectivity of its major components (HGA, solar panels, equipment module, and propulsion module). Solar panel and high gain antenna position ranges will be described for each mission phase.

Format and Content: Text file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-011

Product Delivery Timing & Frequency:
Six months prior to launch, and upon significant changes in configuration, such as HGA deployment, or reflectivity, such as those resulting from degradation of surfaces. This delivery (L-6 mo.) should include the inner cruise phase and two aerobraking profiles (long period & short period orbits).

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman	J Neuman	7/25/96	NAV	Pat Esposito	P. B. Esposito	7/15/96

OIA # SCT-013
Revision: A
Date: 6/13/96

Product Name: Telecom Performance Predictions

Generating Team: SCT

Receiving Team(s): FOS.DSN

Originator: Jim Neuman

Product Description:
The Telemetry Performance Predictions File contains DSN/Spacecraft link performance data vs time for use in telecommunications acquisition of signal. The data consists of link parameters and tolerances for selected spacecraft and ground configurations and points in time for the carrier and the data channels.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-019

Product Delivery Timing & Frequency: As required, approximately monthly.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	F.DSN	D. Recce		7-29-96

MARS GLOBAL SURVEYOR
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OIA # SCT-014
Revision: A
Date: 6/13/96

Product Name: Spacecraft Clock Coefficient File

Generating Team: SCT

Receiving Team(s): SEQ, FOS.DAA, FOS.DSOT, SOT

Originator: Jim Neuman

Product Description:
The Spacecraft Clock Coefficient File provides the information necessary to derive the relationship between the onboard spacecraft clock (SCLK) and Spacecraft Event Time (SCET) in UTC. The file consists of clock coefficients to allow correlation of the two timebases.

Format and Content: ASCII data file enclosed in an SFDU wrapper.

Reference SIS(s): EAE-021 (Ref. MO DSRS-017).

Product Delivery Timing & Frequency:
As required depending on clock drift rate and timing requirements, expected to be approximately weekly.

Applicable Mission Phases: Project Duration.

Method of Delivery: File transferred to the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	F.DAA	J. Swift		
SEQ	Bobby Brooks		96-07-15	DSOT	Curtis Eaton		7-26-96
				SOT	Tom Thorpe		7/25/96

OIA # SCT-015
Revision: Orig.
Date: 8/21/95

Product Name: Aerobraking Data

Generating Team: SCT

Receiving Team(s): NAV

Originator: Jim Neuman

Product Description:
This product contains periapsis timing error estimates and relative dynamic pressure estimates to supplement Navigation Team determination of these parameters.

Format and Content: Text file.

Reference SIS(s): None

Product Delivery Timing & Frequency:
As available from spacecraft telemetry, expected to be approximately daily.

Applicable Mission Phases: Aerobraking

Method of Delivery: Email to NAV computer.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman	J Neuman	9/1/95	NAV	Pat Esposito	P.B Esposito	8/29/95

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SCT ***Spacecraft Team***

SCT.MC **Mission Control (SCT.MC)**

RECEIVING:
SIT-001
RST-002
SEQ-009,-013
RES-002
DSN-001,-003,-014
SCT-003

Canceled OIAs:

ACE / DSN NOCT Pre-pass Briefing	Dan Kiewicz
Command Form (ECRF)	Mac Grant
DSN Monitor 5-19 Decommutation Map	Mac Grant

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OIA #: SCT. MC-005
Revision: A
Date: 6/20/96

Product Name: Duty Roster / Schedule (The "On-Call" list")

Generating Team: SCT.MC

Receiving Team(s): NAV, FOS.DSOT, SEQ

Originator: Jim Neuman

Product Description:
The Duty Roster / Schedule is a listing of "ON-Call" personnel for each Mission Team.

Format and Content:
The Duty Roster / Schedule is a listing of on-call personnel in a Word document.

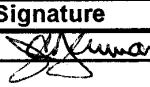
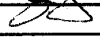
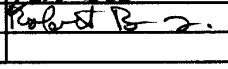
Reference SIS(s): None

Product Delivery Timing & Frequency: Monthly

Applicable Mission Phases: All

Method of Delivery: Electronic

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	F.DSOT	C. Eaton		7-26-96
				SEQ	Bobby Brooks		96-07-15

MARS GLOBAL SURVEYOR
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OIA #: SCT. MC-006
Revision: A
Date: 6/20/96

Product Name: Mission Controllers Real-Time Operations Log

Generating Team: SCT.MC

Receiving Team(s): FOS.DAA

Originator: Jim Neuman

Product Description:
This is the Mission Control Real-Time log file. It contains entries pertaining to S/C health and status, significant events as entered by the mission controller, commanding activity, in & out of lock status, and telemetry as necessary.

Format and Content:
Binary File: Readable only using OLOG Tool. OLOG can output text to a printer.

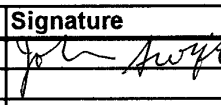
Reference SIS(s): None

Product Delivery Timing & Frequency:
The files will contain 24 hours of data ending at 07:00 am local time. Files are due to be loaded on the PDB by SCT.MC at 07:15 am local time of their ending date with the exception of files ending on Saturday & Sunday local time. These Saturday & Sunday files are due on the PDB at 07:15 am the following Monday.

Applicable Mission Phases: All

Method of Delivery: Electronic transfer to PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	F.DAA	John Swift		7-15-96

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PS&T ***Planning & Sequence Team***

RECEIVING:

SIT-001
NAV-001,-004,-005,-006,-007
SEQ-001,-002,-007
RES-001,-002
DSN-001,-003
DST-001
SCT-003,-008,-014
MC-005
RST-002

Canceled OIAs:

FINCON File	Bobby Brooks
Enhanced Predicted Events File (EPEF)	Bobby Brooks
Sequence Memory Map	Bobby Brooks
Spacecraft Sequence File (SSF)	Bobby Brooks
Aerobraking Keyword File Update	G. M. Vaughn

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SEQ-001
Revision: B
Date: 6/28/96

Product Name: Spacecraft Activity Sequence File (SASF)

Generating Team: SEQ, SCT, SOT

Receiving Team(s): NAV, SCT, SEQ, SOT.SIT,FOS.DAA

Originator: Peter Carberry

Product Description:
This product will contain instances of Spacecraft, ground and geometric activities, each with it's associated parameter list that constitute a sequence.

Format and Content: ASCII Text File with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The SASF will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	SCT	Jim Neuman		7/25/96
NAV	Pat Esposito		9/29/96	S.SIT	Tom Thorpe		7/25/96
				F.DAA	JOHN SWIFT		7-15-96

MARS GLOBAL SURVEYOR
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OIA # SEQ-002
Revision: B
Date: 6/28/96

Product Name: Predicted Events File (PEF)

Generating Team: SEQ

Receiving Team(s): NAV, SCT, SEQ, SOT.SIT, FOS.DAA

Originator: Peter Carberry

Product Description:
This product is the time-ordered listing from SEQGEN that is created as a result of expanding an input SASF.

Format and Content: ASCII Text File with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The PEF will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-26	SCT	Jim Neuman		7/25/96
NAV	Pat Esposito	PB Esposito	7/29/96	S.SIT	Tom Thorpe		7/25/96
				F.DAA	John Swift		7-29-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SEQ-003
Revision: Orig.
Date: 7/17/95

Product Name: STL Predicted Events File (SPEF)

Generating Team: SEQ

Receiving Team(s): SCT.STL

Originator: Peter Carberry

Product Description:
This product is the equivalent of the PEF with additional data. The additional data consists of appending onto each record the hexadecimal equivalent of the respective command. This will allow the STL to perform it's compare function when simulating a sequence.

Format and Content: ASCII text file with SFDU header.

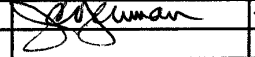
Reference SIS(s): N/A

Product Delivery Timing & Frequency:
The SPEF will be released as per defined project procedures for the appropriate command type and as per the schedule defined by the Uplink Manger.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	S.STL	Jim Neuman		7/25/96

MARS GLOBAL SURVEYOR
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OIA # SEQ-004
Revision: Orig.
Date: 7/6/96

Product Name: Desired Memory Word File (DMWF)

Generating Team: SEQ

Receiving Team(s): SCT

Originator: Peter Carberry

Product Description:
This product is output by SEQTRAN after accepting an SSF as input. It consists of a table of sequence memory locations and the data values contained therein. It is for a sequence being developed, updated or flown.

Format and Content: ASCII Text File with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The DMWF will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manger.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks	Robert B.	96-07-15	SCT	Jim Neuman		7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # SEQ-005
Revision: A
Date: 6/28/96

Product Name: Spacecraft Message File (SCMF)

Generating Team: SEQ

Receiving Team(s): SCT, SCT.STL,FOS.DAA

Originator: Peter Carberry

Product Description:
This product is the resulting bit stream generated as a result of translating an input SSF by SEQTRAN.

Format and Content: ASCII Text File with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The SCMF will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	SCT	Jim Neuman		7/25/96
F.DAA	John SWIFT		7-15-96				

MARS GLOBAL SURVEYOR
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OIA # SEQ-006
Revision: A
Date: 6/28/96

Product Name: SEQTRAN Runlogs

Generating Team: SEQ

Receiving Team(s): SCT, FOS.DAA

Originator: Peter Carberry

Product Description:
SEQTRAN runs information including but not limited to: ERROR messages, DMWF listing and memory map information.

Format and Content: SEQTRAN Output Text File.

Reference SIS(s): N/A

Product Delivery Timing & Frequency:
The SEQTRAN Runlog will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks	Robert B Jr.	96-07-15	SCT	Jim Neuman		7/25/96
F.DAA	J. SWIFT	John A Swift	7-15-96				

MARS GLOBAL SURVEYOR
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OIA # SEQ-007
Revision: B
Date: 6/28/96

Product Name: Sequence Review Comments

Generating Team: All Teams

Receiving Team(s): SEQ

Originator: Peter Carberry

Product Description:
This product consists of either a paper product (using attached form) or electronic form providing sequence product review comments to the SEQ.

Format and Content: Electronic Mail.

Reference SIS(s): N/A

Product Delivery Timing & Frequency:
Review comments will be expected as per defined project procedures and as per the scheduled defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: ACT

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7-5-96	SEQ	Bobby Brooks		96-07-15
NAV	Pat Esposito		7/29/96	SOT	Tom Thorpe		7/25/96

OIA # SEQ-008
Revision: B
Date: 6/28/96

Product Name: SEQGEN Output Product (FINCON)

Generating Team: SEQ

Receiving Team(s): SCT, FOS.DAA

Originator: Peter Carberry

Product Description:
This product is the Spacecraft Final Conditions File generated by SEQGEN and will be used as the Initial Conditions File (INCON) for the next sequential SEQGEN run.

Format and Content: ASCII Text File with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The FINCON will be released as per defined procedures for the appropriate command type and as per the schedule defined by the Uplink Manger.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks	Robert B Jr.	96-07-15	SCT	Jim Neuman	J. Neuman	7/25/96

OIA # SEQ-009
Revision: A
Date: 6/28/96

Product Name: Ground Command File (GCMD)

Generating Team: SEQ

Receiving Team(s): SCT.MC

Originator: Peter Carberry

Product Description:
This product is the Spacecraft Command Message File (SCMF) which has been reformatted in preparation for transmission to the Spacecraft.

Format and Content: ASCII Text Files with SFDU Header.

Reference SIS(s): None

Product Delivery Timing & Frequency:
The GCMD will be released as per the defined project procedures for the command type and as per the schedule defined by the Uplink Manager.

Applicable Mission Phases: Launch to End of Mission.

Method of Delivery: Electronic transfer to the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	SCT	Jim Neuman		7/28/96

OIA #: SEQ-010
Revision: A
Date: 6/28/96

Product Name: Sequence of Events (SOE)

Generating Team: SEQ

Receiving Team(s): SCT, NAV, FOS. DAA, FOS.DSN, FOS.DSOT, SOT

Originator: G. M. Vaughan

Product Description:
ASCII, 132-character per line, Greenwich Mean time-ordered listing of Mars Global Surveyor Flight and Operations events.

Format and Content:
The SOE shall be distributed in ASCII text file form in accordance with SIS SFOC-1-SEG-ANY-SOE.

Reference SIS(s): SFOC-1-SEG-ANY-SOE.

Product Delivery Timing & Frequency:
SOEs shall be generated for each spacecraft sequence load to be uplinked.

Applicable Mission Phases: All

Method of Delivery: Electronic versions are available on the PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	DSOT	Curtis Eaton		7-26-96
F.DAA	John Swift		7-15-96	SCT	Jim Neuman		7/25/96
NAV	Pat Esposito		7/24/96	SOT	Tom Thorpe		7/25/96
F.DSN	Dave Recce		7-15-96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #: SEQ-011
Revision: A
Date: 6/28/96

Product Name: Space Flight Operations Schedule (SFOS)

Generating Team: SEQ

Receiving Team(s): SCT, NAV, FOS.DAA, FOS. DSN, FOS. DSOT, SOT

Originator: G. M. Vaughan

Product Description:
Graphic timeline of a days operational activities. Shows DSN station tracks; spacecraft activities, data rates and formats; meetings and other pertinent information as deemed necessary by the chairman of the operations coordination meetings.

Format and Content:
The SFOS shall be distributed in electronic form in accordance with SIS SFOC-1-SEG-ANY-SFOS.

Reference SIS(s): SFOC-1-SEG-ANY-SFOS.

Product Delivery Timing and Frequency:
The SFOS shall be generated, reproduced and distributed once a week by MC. Each issue shall have undergone review and edit at the Project operations coordination meeting. Each issue shall cover a two week period.

Applicable Mission Phases: All

Method of Delivery: Electronic

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks	Robert B.	96-07-15	DSOT	Curtis Eaton		7-26-96
F.DAA	John Swift	John Swift	7-15-96	SCT	Jim Neuman		7/25/96
NAV	Pat Esposito	P B Esposito	7/15/96	SOT	Tom Thorpe		7/25/96
F.DSN	Dave Recce		7-15-96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA #: SEQ. SEQ-012
Revision: B
Date: 6/28/96

Product Name: SOE/SFOS/DKF "Redlines"

Generating Team: SEQ

Receiving Team (s): SCT, NAV, FOS.DAA, SOT, FOS.DSN,FOS. DSOT

Originator: G. M. Vaughan

Product Description:
REPLACEMENT pages to the SOE and/or SFOS, DKF reflecting late changes.

Format and Content: Like either the SOE or SFOS, DKF.

Reference SIS(s): None

Product Delivery Timing & Frequency: As necessitated by mission sequences and events. The DKF files will be delivered no less than three hours prior to beginning of track.

Applicable Mission Phases: All

Method of Delivery: Electronic

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SEQ	Bobby Brooks		96-07-15	DSOT	Curtis Eaton		7-26-96
F.DAA	John Swift		96-07-15	SCT	Jim Neuman		7/25/96
NAV	Pat Esposito		7/15/96	SOT	Tom Thorpe		7/25/96
F.DSN	Dave Recce		7-15-96				

MARS GLOBAL SURVEYOR
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OIA #: SEQ-013
Revision: B
Date: 6/28/96

Product Name: DSN Keyword Files

Generating Team: SEQ

Receiving Team(s): FOS.DSN, SCT.MC, NAV, FOS.DAA

Originator: G. M. Vaughan

Product Description:
MC will deliver to the DSN the initial keyword files reflecting MGS activities for input into the realtime DSN Operations SOE. The keyword file delivery will be accomplished a minimum of three (3) normal working days prior to the scheduled MGS spacecraft tracking pass. Revisions of previously submitted keyword files shall be accomplished no later than 10 working hours prior to the first station effected.

Format and Content: SFDU-formatted data files as per DSN 820-13; OPS-6-13.

Reference SIS(s): SFOC-1-SEG-DSN-Keywords; SFOC-1-SYS-DSN-FileXfer.

Product Delivery Timing & Frequency:
MGS Keyword file transfers will be executed as required throughout the course of the mission and on the schedule dictated by their generation and/or latest update placing them in the hands of the DSN a minimum of three days prior to the scheduled tracking pass.

Applicable Mission Phases: All except aerobraking

Method of Delivery:
MGS to NOCC PDB electronic file transfer operations in accordance with DSN Document 820-13; OPS-6-18; OPS-6-20-1; OPS-6-20-2 and the "DSN NOCC to External User Transfer Procedures".

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SCT	Jim Neuman		7/25/96	F.DSN	Dave Recce		7-15-96
SEQ	Bobby Brooks		96-07-15	NAV	Pat Esposito		7/15/96
F.DAA	JOHN SWIFT		96-07-15				

MARS GLOBAL SURVEYOR
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RES ***Resource Scheduling***

RECEIVING:
SIT-001
DSN-001,-002,-003
SCT-003

MARS GLOBAL SURVEYOR
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OIA # RES-001
Revision: A
Date: 6//20/96

Product Name: DSN Allocation File

Generating Team: RES

Receiving Team(s): NAV, SEQ, SCT, FOS.DAA

Originator: Belinda Arroyo

Product Description:

The DSN allocation file will contain only Mars Global Surveyor station coverage negotiated for a flight sequence, which includes the period from at least 96 hours prior to start of sequence execution through at least 48 hours after nominal completion of sequence execution to support sequencing, navigation planning, and sequence of events generation activities. The final file delivery for each sequence shall be used by the Spacecraft Team for planning interactive non-stored commanding events during a sequence and by MOA for PDB data gap identification.

Format and Content: SFDU-formatted file.

Reference SIS(s): None

Product Delivery Timing & Frequency:

The Resource Scheduler will nominally provide two DSN allocation files on the MGS PDB on the date and time specified in the latest published sequence implementation schedule for each sequence. SEQ and NAV will be provided with both DSN allocation files per sequence; the first during the sequence design phase, the second during the sequence implementation phase. RTOT (SEGS) will be provided with both files as well for the purpose of generating preliminary and final sequences of events. SCT will be provided with access to the file for use in planning interactive non-stored commanding. MOA will also be provided with access to the final file for use in identifying gaps in data on the PDB. Any redlines to the final delivered file will also be provided by a new file release to the PDB. File release forms will identify the specific naming convention of each file.

Applicable Mission Phases: All

Method of Delivery: Electronic transfer to PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
RES	Belinda Arroyo	Belinda Arroyo	7/15/96				
F.DAA	John Swift	John Swift	7/15/96	SCT	Jim Neuman	Jim Neuman	7/25/96
NAV	Pat Esposito	PB Esposito	7/15/96				

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # RES-002
Revision: A
Date: 6/20/96

Product Name: DSN Configuration Codes

Generating Team: RES

Receiving Team(s): SCT.MC, SEQ, FOS.DAA

Originator: Belinda Arroyo

Product Description:

DSN Configuration Codes are designed to specify the DSN equipment required to track individual spacecraft and are assigned separately to each tracking pass. If no configuration code exists to satisfy a projects needs then a request is sent to DSN Scheduling for generation of a new code to match the project's requirements. Once the new code is generated and verified it is added to the master configuration code file by DSN Scheduling.

Format and Content: SFDU - Formatted File.

Reference SIS(s): JPL D-12213.

Product Delivery Timing & Frequency:
The configuration code file will be delivered once a week on Mondays by 1pm.

Applicable Mission Phases: All

Method of Delivery: Electronic transfer to PDB.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
RES	Belinda Arroyo	Belinda Arroyo	7/15/96	SCT.M	Jim Neuman		7/25/96
SEQ	Bobby Brooks		96-07-15	F.DAA	JOHN SWIFT		7-15-96

MARS GLOBAL SURVEYOR
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SOT ***Science Operations Team***

S.RST **Radio Science Team (SOT.RST)**

RECEIVING:
SIT-001
NAV-008
DSN-001,-005,-007,-009,-010,-011,-012,-013,-017,-018
DAA-002,-003,-004,-005
SCT-001, -002, -003, -009

Canceled OIAs:

Radio Science Occultation Duration Inputs	Mick Connally
Radio Science Parameter Standards & Limits	Mick Connally

MARS GLOBAL SURVEYOR
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OIA #: SOT. RST-002
Revision: A
Date: 7/25/96

Product Name: Radio Science Trigger Files

Generating Team: SOT.RST

Receiving Team(s): SEQ

Originator: Mick Connally

Product Description:
Information needed as an input to the SOE generating process related to Radio Science activities. Specifically included are timing information and equipment configurations.

Format and Content: ASCII Text File.

Reference SIS(s): TBD

Product Delivery Timing & Frequency:
A trigger file is required for each sequence in which a Radio Science support is required.

Applicable Mission Phases: Cruise, Orbit Insertion, Mapping.

Method of Delivery: Electronic file.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
S.RST	Mick Connally		7-25-96	SEQ	Bobby Brooks		96-07-26

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SOT ***Science Operations Team***

S.SIT **Science Instruments Team (SOT.SIT)**

RECEIVING:
SIT-001
NAV-001,-005,-006,-007,-009
SEQ-001,-002,-10,-011,-012
DAA-001,-002,-003,-004,-005
SCT-003,-004,-005,-006

Canceled OIAs:

Instruments imbedded engineering data file	Tom Thorpe
Instruments Power Profile File	Jim Neuman

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENT

OIA #: SOT. SIT-001
Revision: A
Date: 6/20/96

Product Name: Instruments Status Report

Generating Team: SOT.SIT

Receiving Team(s): ALL TEAMS

Originator: Tom Thorpe

Product Description:
The Instruments Status Report is a text file which describes the status of each Payload instrument. This status includes the health of the instrument, significant alarm limit violations, S/C Bus I/F status, current operating sequence, performance assessment, future impact of any abnormal instrument behavior, miscellaneous data pertinent to a specific instrument.

Format and Content:
The Instruments Status Report is a text file enclosed in a Standard Formatted Data Unit. The exact content of each instrument report will be negotiated by each instrument sub-team with the SCT(see Mars Observer SIS).

Reference SIS(s): Mars Observer SSE-004.

Product Delivery Timing & Frequency:
Cruise - The product will be delivered daily for payload instruments that are powered.
Mapping - The product will be delivered daily.
Relay - The product will be delivered daily for payload instruments that are powered.

Applicable Mission Phases: Cruise, mapping and relay phases.

Method of Delivery:
Instrument Status Reports are placed on the PDB via the MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SOT	Tom Thorpe		7/25/96	SCT	Jim Neuman		7/25/96
DAA	John Swift		7-15-96				
SEQ	Bobby Brooks		96-07-15				

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OIA #: SOT. SIT-002
Revision:
Date:

Product Name: Inputs to E-Kernel

Generating Team: SOT.SIT

Receiving Team(s): FOS.DAA

Originator: Tom Thorpe

Product Description:

Format and Content:

Reference SIS(s):

Product Delivery Timing & Frequency:

Applicable Mission Phases:

Method of Delivery:

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
SOT	Tom Thorpe			DAA	John Swift		

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NAV ***Navigation Team***

RECEIVING:
SEQ-001,-002,-010,-011,-012,-013
RES-001
DSN-001,-003,-004,-005,-007,-008,-009,-011,-012,-015,-017,-018
DAA-001
SCT-001,-002,-003,-009,-010,-015
MC-005

Canceled OIAs:

Planetary Ephemeris File	Pat Esposito
Astrodynamic Constants & Initial Conditions File	Pat Esposito

MARS GLOBAL SURVEYOR
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OIA # NAV-001
Revision: A
Date: 7/10/96

Product Name: LIGHT TIME FILE

Generating Team: NAV

Receiving Team(s): FOS.DSN,SCT,SEQ,SOT.SIT, FOS.DAA

Originator: Pat Esposito

Product Description:
THE LIGHT TIME FILE IS PRODUCED FROM THE DPTRAJ SOFTWARE LITIME AND CONTAINS THE UP- AND DOWN-LEG GEOCENTRIC OR TOPOCENTRIC LIGHT TRAVEL TIMES BETWEEN THE SPACECRAFT AND EARTH. IT SHALL BE USED IN DETERMINING THE TIME REQUIRED FOR SIGNALS TO PROPAGATE FROM EARTH TO THE SPACECRAFT AND THE SPACECRAFT TO EARTH. IT SHALL SPAN AN INTERVAL WHICH ENCOMPASSES A SEQUENCE PLANNING PERIOD AND THE SEQUENCE DURATION.

Format and Content:
THE LIGHT TIME FILE IS A ASCII FILE WHICH IS ENCLOSED IN A STANDARD FORMAT DATA UNIT (SFDU) WRAPPER.

Reference SIS(s): MARS OBSERVER NAE-002.

Product Delivery Timing & Frequency:
INTERPLANETARY PHASE: DELIVERED PRIOR TO THE START OF EACH SEQUENCE.
ORBIT INSERTION PHASE: ONE DELIVERY MAY BE SUFFICIENT FOR ENTIRE OI PHASE DEPENDING ON THE ACCURACY REQUIREMENT.
MAPPING PHASE: FILE DELIVERED PRIOR TO START OF EACH SEQUENCE (EVERY 28 DAYS).
RELAY PHASE: TBD

Applicable Mission Phases: ALL

Method of Delivery: FILE TRANSFERRED TO THE PDB VIA THE MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P.B. Esposito	7/15/96	SCT	Jim Neuman		7/24/96
F.DSN	Dave Recce		7-15-96	SEQ	Bobby Brooks		96-07-15
F.DAA	John Swift	John Swift	7-15-96	S.SIT	Tom Thorpe		7/25/96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-002
Revision: A
Date: 7/10/96

Product Name: STATION POLYNOMIAL FILE (STATRJ)

Generating Team: NAV

Receiving Team(s): FOS.DSN, SCT

Originator: Pat Esposito

Product Description:
THE STATION POLYNOMIAL FILE IS PRODUCED FROM THE DPTRAJ SOFTWARE STATRJ AND CONTAINS GEOCENTRIC AND TOPOCENTRIC INFORMATION. THE TRAJECTORY POLYNOMIALS ON THE FILE GIVE RANGES AND ANGULAR RELATIONSHIPS BETWEEN THE SPACECRAFT SUN, EARTH AND MARS. THE TOPOCENTRIC POLYNOMIALS GIVE ONE-WAY DOWN-LEG QUANTITIES. THESE INCLUDE STATION CENTERED RANGES, AZIMUTH ANGLES, AND ELEVATION ANGLES TO THE SPACECRAFT.

THIS INFORMATION IS USED PRIMARILY BY THE TELECOMMUNICATION PREDICTION AND ANALYSIS PROGRAM (TPAP) IN THE TELECOM ANALYSIS SUBSYSTEM (TAS).

Format and Content:
THE STATION POLYNOMIAL FILE IS IN NAVIO FORMAT (BINARY) AND IS ENCLOSED IN A SFDU WRAPPER.

Reference SIS(s): MARS OBSERVER NAE-001.

Product Delivery Timing & Frequency:
INTERPLANETARY PHASE : FILES SHALL BE DELIVERED AFTER INJECTION AND AFTER MAJOR PROPULSIVE MANEUVERS AND COVER THIS ENTIRE PHASE.
ORBIT INSERTION PHASE : MONTHLY .
MAPPING PHASE : ONE FILE DELIVERY EVERY SIX MONTHS.
RELAY PHASE: TBD

Applicable Mission Phases: ALL

Method of Delivery: FILE TRANSFERRED TO THE PDB VIA THE MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P B Esposito	7/15/96	SCT	Jim Neuman	J Neuman	7/25/96
F.DSN	Dave Recce		7-15-96				

MARS GLOBAL SURVEYOR
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OIA # NAV-003
Revision: A
Date: 7/10/96

Product Name: SPACECRAFT EPHEMERIS FILE (P-FILE)

Generating Team: NAV

Receiving Team(s): FOS.DSN

Originator: Pat Esposito

Product Description:
THE P-FILE (PROBE EPHEMERIS) IS PRODUCED FROM THE DPTRAJ SOFTWARE (P-DRIVE OR PV-DRIVE) AND CONTAINS THE SPACECRAFT'S POSITION AND VELOCITY AS A FUNCTION OF TIME. IT IS USED BY THE DSN TO PRODUCE ANGULAR PREDICTIONS, DOPPLER SHIFTS AND BY THE RMDCT TO ANALYZE DSN ACQUIRED RADIOMETRIC DATA FOR "BLUNDER POINTS", BIASES, ETC.

Format and Content:
THE P-FILE IS WRITTEN IN NAVIO FORMAT , WITH RESPECT TO THE J2000 REFERENCE SYSTEM AND DOES NOT HAVE A SFDU WRAPPER.

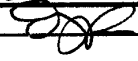
Reference SIS(s): MARS OBSERVER NAE-009.

Product Delivery Timing & Frequency:
LAUNCH : THE INITIAL DELIVERY SHALL OCCUR AT APPROXIMATELY TWO HOURS PRIOR TO THE THIRD DSN DSS ACQUISITION WHICH SHALL OCCUR AT APPROXIMATELY LAUNCH PLUS 14 HOURS. UPDATED P-FILES SHALL OCCUR AS OFTEN AS NECESSARY TO MAINTAIN X-BAND ANTENNA POINTING ACCURACY.
INTERPLANETARY PHASE : DELIVERY FREQUENCY EVERY 2-4 WEEKS.
ORBIT INSERTION AND AEROBRAKING : WEEKLY, TWICE PER WEEK OR AS REQUIRED FOR ANOMALOUS CONDITIONS.
MAPPING PHASE : WEEKLY DELIVERY FREQUENCY.

Applicable Mission Phases: ALL

Method of Delivery:
FILE TRANSFERRED TO DSN NODE OSCAR INTO DIRECTORY NAVOPS$DISK:[MO]

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P B Esposito	7/15/96	F.DSN	Dave Recce		7-15-96

MARS GLOBAL SURVEYOR
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OIA # NAV-004
Revision: A
Date: 7/10/96

Product Name: NAVIGATION TRIGGER FILE

Generating Team: NAV

Receiving Team(s): SEQ

Originator: Pat Esposito

Product Description:
THE PRIMARY PURPOSE OF THIS FILE IS TO PROVIDE DOPPLER SAMPLE RATES OVER SPECIFIED TIME INTERVALS. NOTE THIS FILE DOES NOT CONTAIN INFORMATION ON SRA RANGE PARAMETERS; THIS INFORMATION SHALL BE HANDLED BY AN IOM.
PREVIOUSLY, THIS INTERFACE CONTAINED INFORMATION FOR THE ACQUISITION OF VLBI DATA. THIS DATA TYPE IS NOT REQUIRED BY MGS NAVIGATION.

Format and Content: THIS IS AN ASCII TEXT FILE WITH AN SFDU HEADER.

Reference SIS(s):
SEQUENCE OF EVENTS GENERATION (SEG) SUBSYSTEM INTERFACE SPEC/SRD:
SFOS-1-SEG-ANY-TRIGGER SOE TRIGGER DATA FILE.

Product Delivery Timing & Frequency:
INTERPLANETARY PHASE : SEVERAL UPDATES DURING THIS TIME
ORBIT INSERTION AND AEROBRAKING : DOPPLER SAMPLE RATES SHALL INCREASE DURING PERIAPSIS
MAPPING PHASE: INFREQUENT
RELAY PHASE: INFREQUENT

Applicable Mission Phases: ALL

Method of Delivery: FILE TRANSFERRED TO THE PDB VIA THE MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	PBEsposito	7/15/96	SEQ	Bobby Brooks		96-07-15

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-005
Revision: A
Date: 7/15/96

Product Name: ORBIT PROPAGATION, TIMING & GEOMETRY FILE (OPTG)

Generating Team: NAV

Receiving Team(s): SCT, SEQ, SOT.SIT. FOS.DAA

Originator: Pat Esposito

Product Description:
THE OPTG FILE IS CREATED FROM THE DPTRAJ SOFTWARE TWIST AND CONTAINS THE TIMING OF SPACECRAFT RELATIVE GEOMETRIC EVENTS SUCH AS EQUATOR CROSSING, PERIAPSIS AND APOAPSIS PASSAGE (Tp AND Ta), EARTH OCCULTATION (INGRESS AND EGRESS), SOLAR ECLIPSE (ENTRY AND EXIT) AND OTHER EVENTS AS DOCUMENTED IN THE SIS. DURING ORBIT INSERTION AND AEROBRAKING, BOTH SHORT TERM (SEVERAL DAYS) AND LONG TERM (SEVERAL WEEKS TO MONTHS) OPTG FILES SHALL BE GENERATED. THESE SHALL BE USED FOR PERIAPSIS TIME PREDICTIONS AND LONG TERM AEROBRAKING ORBIT EVOLUTION. FOR MAPPING, OPTG FILES SHALL SPAN AN INTERVAL OF 56 DAYS (I. E. 28 SEQ PLANNING AND 28 DAY SEQ IMPLEMENTATION). FILES SPANNING A 7 DAY INTERVAL SHALL BE GENERATED FOR THE SCT AND THE SIT.

Format and Content:
THE OPTG FILE IS A TEXT FILE WHICH IS ENCLOSED IN A SFDU WRAPPER.

Reference SIS(s): MARS OBSERVER NAE-003, Rev. B.

Product Delivery Timing & Frequency:
INTERPLANETARY PHASE : NONE.
ORBIT INSERTION AND AEROBRAKING PHASE : DAILY (FUNCTION OF Tp NAV ACCURACY AND SCT REQUIREMENTS).
MAPPING PHASE : EVERY 28 DAYS FOR PST AND EVERY WEEK OR TWICE PER WEEK FOR THE SCT AND SOT.SIT.
RELAY PHASE: TBD

Applicable Mission Phases: ORBIT INSERTION, AEROBRAKING AND MAPPING.

Method of Delivery: FILE TRANSFERRED TO THE PDB VIA THE MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P B Esposito	7/15/96	SEQ	Bobby Brooks		96-07-15
SCT	Jim Neuman		7/25/96	S.SIT	Tom Thorpe		7/25/96
				F.DAA	J. Swift		7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-006
Revision: A
Date: 7/15/96

Product Name: SP KERNEL (SPK) FILE

Generating Team: NAV

Receiving Team(s): SCT, SEQ, SOT.SIT, FOS.DAA

Originator: Pat Esposito

Product Description:
SPK FILES CONTAIN SPACECRAFT, PLANETARY AND NATURAL SATELLITE EPHEMERIDES WHICH ARE PRODUCED FROM A COMBINATION OF ODP, DPTRAJ AND NAIF SOFTWARE. THEIR DISTRIBUTION IS VIA THE PDB.

Format and Content: SPK (BINARY) FORMAT AND IS SFDU WRAPPED.

Reference SIS(s): MARS OBSERVER NAE-011.

Product Delivery Timing & Frequency:
INTERPLANETARY PHASE : FILES SHALL BE DELIVERED AFTER INJECTION, PROPULSIVE MANEUVERS AND AGREED UPON FREQUENCY (APPROX. MONTHLY) WITH THE SCT IN ORDER TO MAINTAIN S/C POINTING ACCURACY.
ORBIT INSERTION PHASE : SPK FILES SHALL BE DELIVERED WITH THE SAME FREQUENCY AS THE OPTG FILE THROUGHOUT AEROBRAKING (AB).THIS FREQUENCY (EVERY 2-3 DAYS AND LESS FOR AB) IS A FUNCTION OF THE PREDICTED Tp ACCURACY AS SPECIFIED IN THE FINAL NAVIGATION PLAN. SPK FILE DELIVERY FREQUENCY FOR SCIENCE DATA ANALYSIS SHOULD BE COVERED BY THE ABOVE FREQUENCY.
MAPPING PHASE : EVERY 28 DAYS FOR SEQUENCE DEVELOPMENT FOR THE SEQ TEAM. NOTE THAT ECLIPSE/OCCULTATION TIMES SHALL BE DETERMINED BY THE AUTONOMOUS ECLIPSE MANAGEMENT (AEM) OPERATIONS STRATEGY.
SHORT TERM PREDICTIONS REQUIRED BY SCI AND THE SCT AT A FREQUENCY OF 7-14 DAYS SPANNING AN INTERVAL OF 7-14 DAYS.
RECONSTRUCTED SPKs SPAN AN INTERVAL OF 7 DAYS AND SHALL BE DELIVERED EVERY 7-10 DAYS.

Applicable Mission Phases: INTERPLANETARY, ORBIT INSERTION AND MAPPING.

Method of Delivery: TO THE PDB VIA THE MGS OPS LAN.

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P B Esposito	7/15/96	SEQ	Bobby Brooks	Robert S Brooks	96-07-15
SCT	Jim Neuman	Jim Neuman	7/25/96	S.SIT	Tom Thorpe	Tom Thorpe	7/25/96
				F.DAA	J. Swift	John Swift	7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-007
Revision: A
Date: 7/15/96

Product Name: PLANETARY CONSTANTS KERNEL (PCK) FILE

Generating Team: NAV

Receiving Team(s): SCT, SEQ, SOT.SIT, FOS.DAA

Originator: Pat Esposito

Product Description:
THE PCK FILE CONTAINS PLANET AND NATURAL SATELLITE PHYSICAL AND CARTOGRAPHIC CONSTANTS.

Format and Content: TEXT FILE WHICH IS SFDU WRAPPED.

Reference SIS(s): MARS OBSERVER NAE-007.

Product Delivery Timing & Frequency:
THIS FILE SHALL BE DELIVERED VERY INFREQUENTLY, 2-3 TIMES THROUGHOUT THE ENTIRE MISSION.

Applicable Mission Phases: ORBIT INSERTION AND MAPPING.

Method of Delivery: PDB

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P.B. Esposito	7/15/96	SEQ	Bobby Brooks	Robert B. 2.	96-07-15
SCT	Jim Neuman	Jim Neuman	7/25/96	S.SIT	Tom Thorpe	Tom Thorpe	7/25/96
				F.DAA	John Swift	John Swift	7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-008
Revision: A
Date: 7/15/96

Product Name: MANEUVER PROFILE FILE (MPF)

Generating Team: NAV

Receiving Team(s): SCT, FOS.DAA

Originator: Pat Esposito

Product Description:
THIS FILE CONTAINS THE PROPULSIVE MANEUVER START TIME AND THE DELTA-V (MAGNITUDE AND DIRECTION). MANEUVER PARAMETERS ARE OBTAINED FROM THR DPTRAJ PROGRAMS SEPV AND SEPVMD AND THE MOPS PROGRAM PITCH. THE MOI BURN SHALL BE DESIGNED AS A PITCH-OVER MANEUVER.

Format and Content: THIS IS A TEXT FILE WHICH SHALL BE SFDU WRAPPED.

Reference SIS(s): MARS OBSERVER NAE-006

Product Delivery Timing & Frequency:
INTERPLANETARY : DELIVERED APPROX. 10 DAYS BEFORE TCMs AND THE MOI MANEUVER.
ORBIT INSERTION AND AEROBRAKING : SEE PROJECT SCHEDULE FOR AB-1 AND TMO MANEUVERS. ALL OTHER AB RELATED MANEUVERS SHALL BE "OFF-THE-SHELF" MPF FILES WHICH SHALL BE DESIGNED DURING THE INTERPLANETARY PHASE. THE ABX AND OTM-1 MANEUVER OPERATIONS SCHEDULE SHALL BE DEVELOPED BY THE PROJECT.
MAPPING : APPROX. EVERY 4-6 WEEKS

Applicable Mission Phases: INTERPLANETARY, ORBIT INSERTION AND MAPPING.

Method of Delivery: PDB

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P. B. Esposito	7/15/96	SCT	Jim Neuman		7/25/96
				F.DAA	John Swift		7-15-96

MARS GLOBAL SURVEYOR
OPERATIONAL INTERFACE AGREEMENTS

OIA # NAV-009
Revision: A
Date: 7/15/96

Product Name: ORBIT NUMBER FILE

Generating Team: NAV

Receiving Team(s): SOT.SIT, FOS.DAA

Originator: Pat Esposito

Product Description:
THIS FILE IS PRODUCED FROM THE DPTRAJ UTILITY ORBIT NUMBER AND CONTAINS THE EPOCH OF THE ASCENDING NODE (OR PERIAPSIS PASSAGE, Tp) AND THE CORRESPONDING ORBIT NUMBER.

Format and Content: THIS IS A TEXT FILE WHICH IS SFDU WRAPPED.

Reference SIS(s): MARS OBSERVER NAE-016.

Product Delivery Timing & Frequency:
ORBIT INSERTION : DURING AB ONLY A RECONSTRUCTED FILE SHALL BE PRODUCED AND BE BASED ON Tp .
MAPPING PHASE : THIS FILE (RECONSTRUCTED) SHALL BE DELIVERED EVERY 7-10 DAYS AND SHALL BE BASED ON THE ASCENDING NODE TIME. MORE FREQUENT DELIVERIES MAY BE REQUIRED TO SATISFY THE ACCURACY REQUIREMENT FOR NODE CROSSING TIME.

Applicable Mission Phases: ORBIT INSERTION AND MAPPING.

Method of Delivery: PDB

Signatures:

Team	Team Chief	Signature	Date	Team	Team Chief	Signature	Date
NAV	Pat Esposito	P. B. Esposito	7/15/96	S.SIT	Tom Thorpe		7/25/96
				F.DAA	John Swift		7-15-96